

April 30, 2016

Meagan E. Ormand
Golder Associates Inc.
2108 W. Laburnum Ave.
Suite 200
Richmond, VA 23227

RE: Project: BREMO
Pace Project No.: 92295349

Dear Meagan Ormand:

Enclosed are the analytical results for sample(s) received by the laboratory on April 27, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Nicole Gasiorowski
nicole.gasiorowski@pacelabs.com
Project Manager

Enclosures

cc: Ron DiFrancesco, Golder Associates Inc.
Mike Williams, Golder Associates Inc



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BREMO
Pace Project No.: 92295349

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: BREMO
Pace Project No.: 92295349

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92295349001	EQ TANK	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A
92295349002	PH TANK	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A
92295349003	PUMP TANK	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A
92295349004	BAG FILTER 2	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A
92295349005	CARTRIDGE FILTER	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A
92295349006	FINAL PH TANK	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A
92295349007	MEDIA INF	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A
92295349008	MEDIA MID	EPA 200.8	CKJ	11	PASI-O
		EPA 245.1	SH1	1	PASI-A

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PROJECT NARRATIVE

Project: BREMO
Pace Project No.: 92295349

Method: EPA 200.8
Description: 200.8 MET ICPMS
Client: Golder_Dominion_Bremo
Date: April 30, 2016

General Information:

8 samples were analyzed for EPA 200.8. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: BREMO
Pace Project No.: 92295349

Method: EPA 245.1
Description: 245.1 Mercury
Client: Golder_Dominion_Bremo
Date: April 30, 2016

General Information:

8 samples were analyzed for EPA 245.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 245.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: EQ TANK		Lab ID: 92295349001	Collected: 04/25/16 18:30	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	5.6	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7440-36-0	
Arsenic	66.5	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:09	7440-43-9	
Chromium	1.2	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7440-47-3	
Copper	1.4	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7440-50-8	
Lead	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7439-92-1	
Nickel	1.4	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7440-02-0	
Selenium	2.3	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:09	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:09	7440-28-0	
Zinc	2.9J	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:09	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:13	7439-97-6	

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: PH TANK		Lab ID: 92295349002	Collected: 04/25/16 19:00	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	6.0	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7440-36-0	
Arsenic	81.2	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:14	7440-43-9	
Chromium	1.0	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7440-47-3	
Copper	1.2	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7440-50-8	
Lead	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7439-92-1	
Nickel	1.5	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7440-02-0	
Selenium	2.3	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:14	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:14	7440-28-0	
Zinc	2.7J	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:14	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:20	7439-97-6	

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: PUMP TANK		Lab ID: 92295349003	Collected: 04/25/16 21:06	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	6.0	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7440-36-0	
Arsenic	15.3	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:17	7440-43-9	
Chromium	1.0	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7440-47-3	
Copper	1.7	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7440-50-8	
Lead	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7439-92-1	
Nickel	1.5	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7440-02-0	
Selenium	2.0	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:17	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:17	7440-28-0	
Zinc	8.4	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:17	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:22	7439-97-6	

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: BAG FILTER 2		Lab ID: 92295349004	Collected: 04/25/16 21:08	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	6.1	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7440-36-0	
Arsenic	6.1	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:19	7440-43-9	
Chromium	0.98J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7440-47-3	
Copper	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7440-50-8	
Lead	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7439-92-1	
Nickel	1.3	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7440-02-0	
Selenium	1.8	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:19	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:19	7440-28-0	
Zinc	<2.5	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:19	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:25	7439-97-6	

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: CARTRIDGE FILTER		Lab ID: 92295349005	Collected: 04/25/16 21:10	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	5.8	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7440-36-0	
Arsenic	6.0	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:21	7440-43-9	
Chromium	1.7	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7440-47-3	
Copper	2.2	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7440-50-8	
Lead	0.65J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7439-92-1	
Nickel	1.6	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7440-02-0	
Selenium	1.8	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:21	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:21	7440-28-0	
Zinc	11.8	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:21	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:27	7439-97-6	

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: FINAL PH TANK		Lab ID: 92295349006	Collected: 04/25/16 22:10	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	0.59J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7440-36-0	
Arsenic	1.4	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:24	7440-43-9	
Chromium	0.52J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7440-47-3	
Copper	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7440-50-8	
Lead	0.62J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7439-92-1	
Nickel	0.74J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7440-02-0	
Selenium	0.66J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:24	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:24	7440-28-0	
Zinc	4.3J	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:24	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:29	7439-97-6	

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: MEDIA INF		Lab ID: 92295349007	Collected: 04/25/16 21:40	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	5.7	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7440-36-0	
Arsenic	11.6	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:31	7440-43-9	
Chromium	0.78J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7440-47-3	
Copper	0.79J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7440-50-8	
Lead	0.51J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7439-92-1	
Nickel	1.5	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7440-02-0	
Selenium	1.8	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:31	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:31	7440-28-0	
Zinc	10.7	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:31	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:37	7439-97-6	

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ANALYTICAL RESULTS

Project: BREMO
Pace Project No.: 92295349

Sample: MEDIA MID		Lab ID: 92295349008	Collected: 04/25/16 21:50	Received: 04/27/16 10:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8						
Antimony	1.7	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7440-36-0	
Arsenic	0.81J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7440-38-2	
Cadmium	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:34	7440-43-9	
Chromium	0.79J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7440-47-3	
Copper	0.75J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7440-50-8	
Lead	1.6	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7439-92-1	
Nickel	1.6	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7440-02-0	
Selenium	0.85J	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7782-49-2	
Silver	<0.050	ug/L	0.10	1	04/28/16 19:34	04/29/16 08:34	7440-22-4	
Thallium	<0.50	ug/L	1.0	1	04/28/16 19:34	04/29/16 08:34	7440-28-0	
Zinc	7.7	ug/L	5.0	1	04/28/16 19:34	04/29/16 08:34	7440-66-6	
245.1 Mercury		Analytical Method: EPA 245.1 Preparation Method: EPA 245.1						
Mercury	ND	ug/L	0.10	1	04/28/16 15:15	04/29/16 17:39	7439-97-6	

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QUALITY CONTROL DATA

Project: BREMO
Pace Project No.: 92295349

QC Batch:	MERP/9320	Analysis Method:	EPA 245.1
QC Batch Method:	EPA 245.1	Analysis Description:	245.1 Mercury
Associated Lab Samples:	92295349001, 92295349002, 92295349003, 92295349004, 92295349005, 92295349006, 92295349007, 92295349008		

METHOD BLANK:	1721843	Matrix:	Water
Associated Lab Samples:	92295349001, 92295349002, 92295349003, 92295349004, 92295349005, 92295349006, 92295349007, 92295349008		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	04/29/16 17:08	

LABORATORY CONTROL SAMPLE: 1721844

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1721845 1721846

Parameter	Units	92295349001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.6	2.5	102	99	70-130	2	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BREMO
Pace Project No.: 92295349

QC Batch:	MPRP/30128	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
Associated Lab Samples:	92295349001, 92295349002, 92295349003, 92295349004, 92295349005, 92295349006, 92295349007, 92295349008		

METHOD BLANK:	1556959	Matrix:	Water
Associated Lab Samples:	92295349001, 92295349002, 92295349003, 92295349004, 92295349005, 92295349006, 92295349007, 92295349008		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.50	1.0	04/29/16 08:02	
Arsenic	ug/L	<0.50	1.0	04/29/16 08:02	
Cadmium	ug/L	<0.050	0.10	04/29/16 08:02	
Chromium	ug/L	<0.50	1.0	04/29/16 08:02	
Copper	ug/L	<0.50	1.0	04/29/16 08:02	
Lead	ug/L	<0.50	1.0	04/29/16 08:02	
Nickel	ug/L	<0.62	1.0	04/29/16 08:02	
Selenium	ug/L	<0.50	1.0	04/29/16 08:02	
Silver	ug/L	<0.050	0.10	04/29/16 08:02	
Thallium	ug/L	<0.50	1.0	04/29/16 08:02	
Zinc	ug/L	<2.5	5.0	04/29/16 08:02	

LABORATORY CONTROL SAMPLE & LCSD: 1556960

LABORATORY CONTROL SAMPLE & LCSD: 1556960			1556963							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Antimony	ug/L	50	47.7	47.8	95	96	85-115	0	20	
Arsenic	ug/L	50	49.0	49.2	98	98	85-115	0	20	
Cadmium	ug/L	5	4.8	4.9	96	97	85-115	1	20	
Chromium	ug/L	50	49.2	49.6	98	99	85-115	1	20	
Copper	ug/L	50	49.1	49.4	98	99	85-115	1	20	
Lead	ug/L	50	49.0	48.6	98	97	85-115	1	20	
Nickel	ug/L	50	49.3	49.4	99	99	85-115	0	20	
Selenium	ug/L	50	51.0	51.5	102	103	85-115	1	20	
Silver	ug/L	5	4.8	4.8	95	95	85-115	0	20	
Thallium	ug/L	50	49.4	49.1	99	98	85-115	1	20	
Zinc	ug/L	250	250	250	100	100	85-115	0	20	

MATRIX SPIKE SAMPLE: 1556961

Parameter	Units	92295349001					% Rec Limits	Qualifiers
		Result	Spike Conc.	MS Result	MS % Rec			
Antimony	ug/L	5.6	50	53.0	95	70-130		
Arsenic	ug/L	66.5	50	111	90	70-130		
Cadmium	ug/L	<0.050	5	4.7	94	70-130		
Chromium	ug/L	1.2	50	49.2	96	70-130		
Copper	ug/L	1.4	50	47.9	93	70-130		
Lead	ug/L	<0.50	50	49.3	98	70-130		
Nickel	ug/L	1.4	50	48.0	93	70-130		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BREMO
Pace Project No.: 92295349

MATRIX SPIKE SAMPLE:		1556961					
Parameter	Units	92295349001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Selenium	ug/L	2.3	50	49.0	93	70-130	
Silver	ug/L	<0.050	5	4.6	93	70-130	
Thallium	ug/L	<0.50	50	50.2	100	70-130	
Zinc	ug/L	2.9J	250	237	94	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: BREMO
Pace Project No.: 92295349

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville
PASI-O Pace Analytical Services - Ormond Beach

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BREMO
Pace Project No.: 92295349

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92295349001	EQ TANK	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349002	PH TANK	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349003	PUMP TANK	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349004	BAG FILTER 2	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349005	CARTRIDGE FILTER	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349006	FINAL PH TANK	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349007	MEDIA INF	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349008	MEDIA MID	EPA 200.8	MPRP/30128	EPA 200.8	ICPM/12191
92295349001	EQ TANK	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958
92295349002	PH TANK	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958
92295349003	PUMP TANK	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958
92295349004	BAG FILTER 2	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958
92295349005	CARTRIDGE FILTER	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958
92295349006	FINAL PH TANK	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958
92295349007	MEDIA INF	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958
92295349008	MEDIA MID	EPA 245.1	MERP/9320	EPA 245.1	MERC/8958

REPORT OF LABORATORY ANALYSIS

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	Document Name:	Document Revised: 18FEB2016
	Sample Condition Upon Receipt(SCUR)	Page 1 of 2
	Document No.: F-CHR-CS-003-rev.18	Issuing Authority: Pace Huntersville Quality Office

Page 2 of 2 for Internal Use ONLY

Sample Condition Upon Receipt

Client Name:

Project #:

WO#: 92295349



Courier:

☐ Commercial

☒ Fed Ex

☐ Pace

☐ UPS

☐ USPS

☐ Other: _____

☐ Client

Custody Seal Present?

☐ Yes

☒ No

Seals Intact?

☒ Yes

☐ No

Packing Material:

☐ Bubble Wrap

☐ Bubble Bags

☒ None

☐ Other: _____

Thermometer: ☐ IR Gun #5 SN: 15527198

☐ _____

Type of Ice:

☒ Wet

☐ Blue

☐ None

☐ Samples on ice, cooling process has begun

Correction Factor: 0.0°C

Cooler Temp Corrected (°C):

2.6

Biological Tissue Frozen?

☐ Yes

☐ No

☒ N/A

Temp should be above freezing to 6°C

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?

☐ Yes

☐ No

			COMMENTS:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	2-day hold.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	Note if sediment is visible in the dissolved container
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes Date/Time/ID/Analysis Matrix: <u>WW</u>			
All containers needing acid/base preservation have been checked?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)			
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC,LLHg	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Samples checked for dechlorination	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

Project Manager SCURF Review: NMG

Date: 4-27-16

Project Manager SRF Review: NMG

Date: 4-27-16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: golider
Address: 2108 W Lehigh Ave 200
City: Richmond, VA 23237
Phone: 804-551-6129 Fax: 804-358-2900
Email To: normand@golider.com
Requested Due Date/TAT: 2 Day

Section B

Required Project Information:

Report To: normand@golider.com
Copy To: normand@golider.com
Purchase Order No.: Bremd
Project Name: Bremd
Project Number: 1580347.200

Section C

Invoice Information:

Attention: accounts payable
Company Name: golider
Address: Richmond, VA 23237
Pace Quote: 1580347.200
Reference: 1580347.200
Pace Project Manager: 1580347.200
Pace Profile #: 1580347.200

REGULATORY AGENCY

NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐
UST ☐ RCRA ☐ OTHER ☐
Site Location: VA
STATE: VA

Page: 1 of 1

2033225

00015374

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB											
1	EQ TANK	DW					4/25/16	1830				1					001
2	EQ TANK	WT					4/25/16	1945				1					002
3	PUMP TANK	WT					4/25/16	2106				1					003
4	BAK FILTER 2	WT					4/25/16	2108				1					004
5	CARBONATE FILTER	WT					4/25/16	2110				1					005
6	FUSAL EQ TANK	WT					4/25/16	2210				1					006
7	MEDIA TANK	WT					4/25/16	2140				1					007
8	MEDIA MID	WT					4/25/16	2150				1					008
9																	
10																	
11																	
12																	
ADDITIONAL COMMENTS																	
RELINQUISHED BY / AFFILIATION																	
DATE																	
TIME																	
ACCEPTED BY / AFFILIATION																	
DATE																	
TIME																	
SAMPLE CONDITIONS																	
Temp in °C																	
Received on Ice (Y/N)																	
Custody Sealed Cooler (Y/N)																	
Samples Intact (Y/N)																	

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY):

Temp in °C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)